

based polymer, ~~gene~~, balanced by a terminator, one or more selectable marker genes with, and one or more regulatory elements to facilitate transformation of plant cells.

4. (Amended) ~~An~~ The expression cassette of claim 3 wherein the ~~gene~~ contains the elastic and plastic protein based polymer comprises a repetitive amino acid sequence EVGVGP Gly-Val-Gly-Val-Pro (SEQ. ID. NO. 2).

5. (Amended) ~~As~~ The expression cassette of claim 3 wherein said fiber specific promoter comprises an E-6 promoter which comprises the fiber specific promoter E-6.

6. (Amended) ~~As~~ The expression cassette of claim 3 wherein the gene is synthetic; and is not found in nature and wherein manipulation of said gene sequence allows control of the gene sequence as well as physical/ and/or chemical properties of the encoded elastic and plastic protein-based polymer could be altered at will.

Please add the following new claim:

7. (New) A transgenic cotton plant according to Claim 1, wherein said elastic and plastic protein based polymer exhibits temperature transition at a temperature lower than body temperature wherein said protein based polymer unfolds during said temperature transition.

In the Claims (clean copy as amended)

3. (Amended) A transgenic cotton plant comprising fiber cells stably transformed with an expression cassette comprising a gene encoding an elastic and plastic protein based polymer wherein said fiber cells exhibit increased water absorption, fiber strength, elasticity, and dye binding capacity relative to untransformed fiber cells.
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3. (Amended) The transgenic cotton plant of claim 1, wherein said gene encodes the repetitive amino acid sequence Gly-Val-Gly-Val-Pro (SEQ. ID. NO. 2).
6. (Amended) An expression cassette comprising a fiber specific promoter driving expression of a gene encoding an elastic and plastic protein based polymer, a terminator, one or more selectable marker genes, and one or more regulatory elements to facilitate transformation of plant cells.
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7. (Amended) The expression cassette of claim 3 wherein the elastic and plastic protein based polymer comprises a repetitive amino acid sequence Gly-Val-Gly-Val-Pro (SEQ. ID. NO. 2).
5. (Amended) The expression cassette of claim 3 wherein said fiber specific promoter comprises an E-6 promoter.
6. (Amended) The expression cassette of claim 3 wherein the gene is synthetic and is not found in nature and wherein manipulation of said gene sequence allows control of physical and/or chemical properties of the encoded elastic and plastic protein-based polymer.

Please add the following new claim:

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7. (New) A transgenic cotton plant according to Claim 1, wherein said elastic and plastic protein based polymer exhibits temperature transition at a temperature lower than body temperature wherein said protein based polymer unfolds during said temperature transition.